

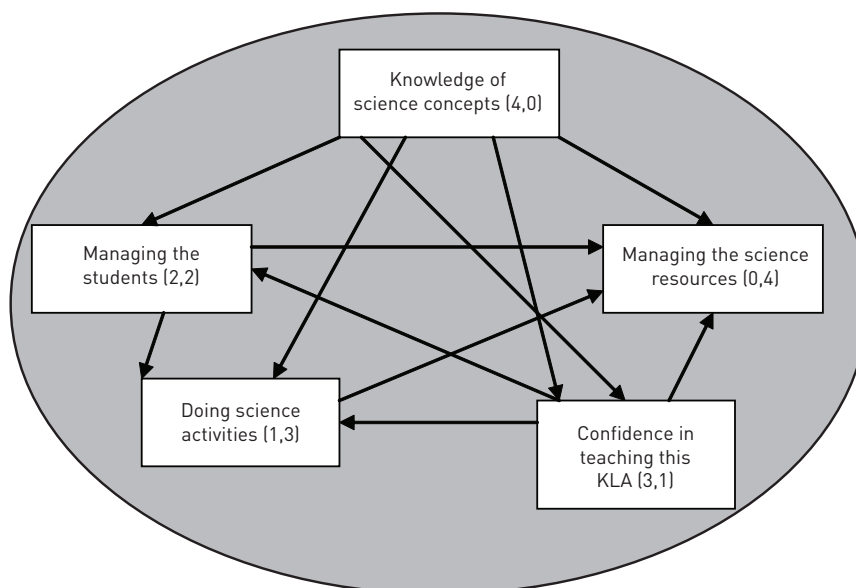
# Interrelationship digraph

## Purpose

A tool for examining the cause and effect relationship between different factors. It is used to determine which factors have the most impact on other factors. This helps to identify where the effort can be focused to gain greatest benefit. The word digraph means a 'graph between two'.

## Process

- Write on a chart or whiteboard the factors you wish to study and arrange them in a large circle.
- Systematically study the relationship between each pair of factors by asking the following questions and receiving responses from participants.
  - 1 Does a relationship exist? If so, draw a line connecting the two factors.
  - 2 Which affects the other the most? Put an arrow on the end of the line which points to the affected factor. You cannot use a two-headed arrow. A decision must be made as to which factor affects which the most.
- Continue around the circle until all pairs have been studied.
- For each factor, count the number of arrows out and the number of arrows in and place the numbers in parentheses; for example, (3, 1) indicates 3 arrows out and 1 arrow in.
- Rank the factors in order of the highest number of out arrows. These factors have the most impact on, and influence, over the other factors.



(Continued over)

## Interrelationship digraph (cont)

### Product

The interrelationship digraph is a visual display of related factors with the highest impact factors being clearly identified. The example illustrated (see previous page) shows some of the typical concerns primary teachers have in teaching and learning science.

The result of this interrelationship digraph shows that 'knowledge of science concepts' is the factor which affects the other factors the most (it has the most out arrows). By addressing this issue there is an automatic flow-on effect to the other issues of concern. It clearly shows where effort needs to be focused.

### PrimaryConnections examples

- The main concerns primary teachers have about the teaching and learning of science.
- The factors affecting learning of science in primary classrooms.
- The actions required to improve the effectiveness of the teaching and learning of science at this school.

### References

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